Slide 7 in Lect 11

Let A = { male single, skilled, own, <100 } ← Given

if P(good | A) > P(bad | A) then A is → good

if P(good | A) < P(bad | A) then A is → bad

$$P(good|A) = \frac{P(A|good)\,P(good)}{P(A)} \quad , P(bad|A) = \frac{P(A|bad)\,P(bad)}{P(A)}$$

يمكن نقارن بين البسط بس لأن المقام ثابت في الحالتين

$$P(A|good) = P(\text{male single}|good) * P(\text{skilled}|good) * P(\text{own}|good) * P(<100|good)$$

$$= \frac{14}{19} * \frac{12}{19} * \frac{13}{19} * \frac{10}{19} = \frac{21840}{130321} = 0.167$$

$$P(good) = \frac{19}{27} = 0.7037$$

$$P(A|good) * P(good) = 0.1175$$

$$P(A|bad) = P(\text{male single}|bad) * P(\text{skilled}|bad) * P(\text{own}|bad) * P(<100|bad)$$

$$= \frac{2}{8} * \frac{4}{8} * \frac{4}{8} * \frac{7}{8} = \frac{329}{4096} = 0.0803$$

$$P(Bad) = \frac{8}{27} = 0.296$$

$$P(A|bad) * P(Bad) = 0.0238$$

$\therefore P(A|good) * P(good) > P(A|Bad) * P(Bad)$

then $P(good|A) > P(Bad|A)$

then A → good #